

SRP Edits

Governor's Water Augmentation, Innovation and Conservation Council
Post-2025 AMAs Committee

DRAFT ISSUE BRIEF

GROUNDWATER IN THE ASSURED WATER SUPPLY PROGRAM

ISSUE STATEMENT

Large ~~parts~~^{areas} of the Active Management Areas (AMAs) remain groundwater-dependent due to a lack of renewable water supplies and infrastructure, which creates uncertainties as groundwater supplies become more limited.

- What are the role and consequences of the use of groundwater to support new growth after 2025?
- What are the risks to homeowners whose physical groundwater supplies may be depleted after the regulatory Assured Water Supply 100-year timeframe?
- What roadblocks prevent access to renewable supplies and infrastructure in these groundwater-dependent areas?

BACKGROUND

The Assured Water Supply (AWS) Program was designed as a consumer protection law and has evolved into a significant tool for sustaining the state's economic health by preserving groundwater resources and promoting long-term water supply planning.¹ The AWS Rules were developed with stakeholder input over many years, ultimately adopted by the Arizona Department of Water Resources (ADWR) in 1995², and subsequently modified over time. The AWS Program provides consumer and economic protection by requiring a demonstration of a 100-year water supply to serve a new development before lots can be sold in the State's AMAs.

An AWS can be demonstrated through either a Designation of AWS (Designation) or Certificate of AWS (Certificate). To secure either a Certificate or Designation, a 100-year supply of water must be demonstrated to satisfy the needs of the proposed use, either for one subdivision in the case of a Certificate, or for all of the demands within the service area of a water provider who seeks a Designation. The Director of ADWR must review a Designation at least every 15 years to determine whether the Designation should be modified or revoked.³ The Director does not typically reevaluate a Certificate.

Both Certificates and Designations can be demonstrated based entirely or partially on groundwater. Two of the requirements for demonstrating an AWS are that the water for the proposed Certificate or Designation is Physically Available for 100 years and that the use of the water is consistent with the management goal of the AMA. Physical Availability of groundwater is the regulatory measure of an applicant's ability to demonstrate sufficient groundwater for 100 years. To satisfy the Physical Availability requirement for groundwater, an applicant must show that its groundwater withdrawals in addition to existing demands on the aquifer and previously approved AWS determinations would not cause the depth to groundwater to exceed a regulatory limit

Commented [RDC(1)]: This is a bit too broad. The AWS program only applies in the AMAs. I think some in rural Arizona would argue that their economic health is actually being threatened by the AWS program because their water supplies are now targeted for acquisition by AMA entities to meet the AWS requirements.

Commented [RDC(2)]: If you capitalize this term, you should footnote what it is or where a definition of it can be found, otherwise do not capitalize it.

¹ <https://new.azwater.gov/aaws>

² The 1995 rules did not include provisions specific to consistency with the management goal of the Santa Cruz Active Management Area (SCAMA), which was created by the Legislature in 1994 (A.R.S. § 45-411.04). AWS rules have not yet been modified to address consistency with the management goal of the SCAMA, and it is not addressed in this Issue Brief.

³ A.A.C. R12-15-711

(1,000 feet below the land surface in the Phoenix, Tucson, Prescott, and Santa Cruz AMAs; 1,100 feet in the Pinal AMA) ~~and would not negatively affect previously issued AWS Determinations and existing municipal uses.~~⁴

The requirement that projected groundwater use be consistent with the management goal may be met if withdrawals are made pursuant to the groundwater allowance or through the use of pledged extinguishment credits (which are added to the groundwater allowance balance).⁵ More detail on these types of groundwater withdrawals is provided in the *Unreplenished Groundwater Withdrawals Issue Brief*.

In the Phoenix, Pinal and Tucson AMAs, the requirement that projected groundwater use be consistent with the management goal may also be satisfied if the subdivision or water provider becomes a member of the Central Arizona Groundwater Replenishment District (CAGRDR). The CAGRDR is an entity created within the Central Arizona Water Conservation District (CAWCD), which operates the Central Arizona Project (CAP). Since CAWCD encompasses only Maricopa, Pinal and Pima Counties, the CAGRDR does not serve the Prescott or Santa Cruz AMAs. The CAGRDR replenishes excess groundwater⁶ pumped by or delivered to its members, after that volume is annually calculated and reported to the CAGRDR. The CAGRDR Plan of Operation must conform with the management goals of each AMA in its service area and requires approval at least every ten years from the Director of ADWR.

ISSUE DESCRIPTION

Even with the benefits that followed the 1980 Groundwater Management Act, there are numerous pressures placed on groundwater in the AMAs, many of which have been identified in the *Unreplenished Groundwater Withdrawals*, *Hydrologic Disconnect*, and *Exempt Wells* Issue Briefs. The AWS Program has been a significant factor in encouraging municipal water providers to reduce groundwater use in the AMAs over the last 25 years. In the context of all the challenges identified by the Post-2025 AMAs Committee, the State should evaluate the AWS Program and consider how it can be improved well beyond 2025. Three main questions related to groundwater use under the AWS Program provide a starting point for evaluating whether the AWS Program could better provide consumer and economic protection and better aid in achieving the AMA management goals.

What are the role and consequences of the use of groundwater to support new growth after 2025?

As described above, under the current regulatory structure, new subdivisions that fall under the jurisdiction of the AWS Program may join the CAGRDR for replenishment services and/or utilize groundwater that is consistent with the management goal through the use of Extinguishment Credits and/or the Groundwater Allowance.⁷ As groundwater uses expand to serve new development, there is a corresponding draw upon the aquifer that can reduce the volume of groundwater that exists in the aquifer.

While the CAGRDR will replenish the portion of these groundwater withdrawals attributed to its member obligation, localized depletion of groundwater may occur in cases where replenishment occurs outside the area

⁴ A.A.C. R12-15-716 and ADWR Substantive Policy Statement: *Hydrologic Studies Demonstrating Physical Availability of Groundwater for Assured and Adequate Water Supply Applications* (AWS 7).

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⁶ "Excess groundwater" is any amount of pumped groundwater beyond what is permitted by the AWS rules. With a few exceptions, this generally means the volume of groundwater pumped that exceeds the groundwater allowance and/or extinguishment credits of a CAWS or DAWS. More detail on CAGRDR operations is provided in the *CAGRDR Issue Brief*.

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where groundwater is withdrawn or in cases where there are allowable unreplenished groundwater withdrawals.⁸ The CAGR has the flexibility to replenish in various locations of the three AMAs it serves in order to fulfill ~~for~~ its members' consistency with the ~~AMA-wide~~ management goal requirement, but is not required to recharge within the area of impact of its' members groundwater pumping ~~which could be at odds with the physical availability criteria for AWS demonstration.~~

New Certificates and Designations may be approved by ADWR as long as Physically Available groundwater can be sufficiently demonstrated. In the Pinal AMA, ADWR modeling shows insufficient groundwater is Physically Available for AWS determinations already issued by ADWR over the 100-year modeling period (unmet AWS demand) which, if left unresolved, would not allow additional AWS determinations using groundwater or stored water recovered outside the area of impact to be approved.⁹ In addition to curtailing the ability to subdivide lands for new development, diminished Physical Availability may lead to other adverse impacts. Assuming ADWR projections are accurate and no other steps are taken to reduce or ameliorate impacts of groundwater drawdown, depths to water in the AMAs would decline, resulting in increased land subsidence, decreased aquifer storage, and the potential deterioration of water quality.¹⁰ The degree to which these adverse impacts may occur when groundwater levels fall to depths of 1,000' below land surface is also unknown.¹¹ ADWR is in the process of updating its groundwater models for the Phoenix and Tucson AMAs which should provide better projections of the groundwater supplies in these two AMAs.

What are the risks to homeowners whose physical groundwater supplies may be depleted after the regulatory Assured Water Supply 100-year time frame?

As noted above, Certificates are typically not re-evaluated after they are issued by ADWR. This raises a question as to the potential ramifications for owners of land after 100 years. While the water demands of a given Certificate or Designation must be incorporated in future AWS applications, groundwater pumping reduces the amount of groundwater available for all existing municipal water providers serving Certificated lands or with Designations through time. These impacts may be more likely to occur where pumping and replenishment are hydrologically disconnected. Even with an AWS determination, other factors, including new and existing groundwater users not subject to the AWS requirements, may also affect the availability of groundwater supplies during the 100-year regulatory timeframe of an AWS determination.

What roadblocks prevent access to renewable supplies and infrastructure in these groundwater-dependent areas?

Groundwater-dependent municipal water providers face obstacles in their ability to acquire renewable water supplies, to become designated, to extend their existing designations, or to reduce or eliminate their reliance on

⁸ See the *Hydrologic Disconnect Issue Brief* for more detail. This phenomenon can also occur in situations where municipal water providers utilize annual storage and recovery of surface water and effluent to serve Certificated lands or lands within Designated service areas.

⁹ 2019 Pinal Model and 100-year Assured Water Supply Projection Technical Memorandum, October 11, 2019, http://infoshare.azwater.gov/docushare/dsweb/Get/Document-11793/2019_Pinal_Model_and_100-Year_AWS_Projection-Technical_Memorandum.pdf; Pinal Model 2019 Update Presentation, November 1, 2019, Slide 53, https://new.azwater.gov/sites/default/files/20191101_Pinal_Model_2019_Presentation.pdf.

¹⁰ Lower Hassayampa Sub-Basin Hydrologic Study and Computer Model. Town of Buckeye, Figure 9-16 November 15, 2006; ADWR Modeling Report No. 22, https://new.azwater.gov/sites/default/files/Modeling_Report_22_2.pdf; "Ground-Water Depletion Across the Nation." USGS, 2003. [https://pubs.usgs.gov/fs/fs-103-03/JBartolinoFS\(2.13.04\).pdf](https://pubs.usgs.gov/fs/fs-103-03/JBartolinoFS(2.13.04).pdf).

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the CAGRD. These obstacles include the lack of institutional structures to facilitate the acquisition of renewable supplies, constraints on the marketability of surface water rights, costs of such supplies, certain restrictions imposed on private utilities by the Arizona Corporation Commission, resistance to and/or limitations on water transfers, obstacles to accessing infrastructure to move renewable supplies, and the AWS Rules, which emphasize the acquisition of permanent renewable water supplies well in advance of actual water use. These obstacles point to an overarching financial challenge for water providers, particularly those with smaller customer bases, to be able to finance and absorb the costs for such acquisitions.

Commented [MCM3]: Excellent section!

Many groundwater-dependent municipal water providers are limited by their financial capabilities and in their access to the infrastructure necessary to deliver renewable supplies to their service areas because of where they are located.

The quantity of renewable supplies realistically available in the future is a concern for both municipal water providers and the CAGRD (see *CAGRD Issue Brief*). With fewer renewable supplies available for acquisition, municipal water providers will compete not only with each other, but also with the CAGRD for the same supplies. Different perspectives exist regarding the role of competition in acquiring supplies, particularly in regard to whether the CAGRD as an entity has reduced competition and may continue to reduce competition in the future. These perspectives need to be considered as the State continues to look at barriers and opportunities to obtain renewable supplies and reduce reliance on groundwater.

There are 242 undesignated municipal water providers in the Phoenix, Pinal and Tucson AMAs. Since 1999, no undesignated municipal water providers have successfully been newly designated in the Phoenix AMA, which illustrates the difficulty of building a renewable water supply portfolio and reducing dependence on groundwater. The recent effort by the Town of Queen Creek to acquire renewable supplies to obtain a Designation and eliminate the replenishment obligation of the CAGRD member lands it serves, demonstrates the difficult financial and logistical hurdles municipal water providers face. Understanding the Town's challenges and motivations, as well as those of the City of Buckeye, which has also pursued for years a Designation, could deepen the understanding of these issues and present opportunities for improvement moving forward.

Commented [MCM4]: Another excellent section!

Town of Gilbert Edits

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Commented [LH1]: A transition to the questions would be helpful for flow.

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Commented [LH2]: Unsure of whether the role of groundwater part of this question has been addressed. Is there something in the groundwater code or management plans that can address this part of the question? Maybe address that the role of groundwater in the AMAs is to be our long term supply that we want to preserve for future generations.

Commented [LH3]: And LTSCs

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Commented [LH4]: Lots of consequences mentioned here, recommend summarizing them in a final sentence or two to wrap up this section.

Curtailing new development
Land subsidence
Decreased aquifer storage
Water quality degradation

Commented [LH5]: Other roadblocks that could be addressed:

Private water companies serving municipalities do not have access to the same funding mechanisms for water supply or infrastructure projects that are available to public utilities. They also lack the ability to implement public policy that would promote use of renewable supplies.

Some municipalities are served by multiple water providers which makes it more difficult to implement large capital projects to bring in renewable supplies. Though these types of partnerships are occurring and have been successful.

Private water providers are not directly involved in the development of land use plans for the areas they are serving.

The regulation by the ACC differs from that of public utilities run by cities, towns, or counties. Public utilities are regulated by their constituents through election of the mayor and council, board of supervisors, or other elected boards (e.g. homeowner's association). The local elected body approves rates, capital improvement programs, the water service boundaries, and other water service policies. For a public utility, its governance is handled at a local level by people invested in and living in the community. The ACC may not be as aware of the local issues that may be impacting a private water company and its operations.

supplies, constraints on the marketability of surface water rights, costs of such supplies, certain restrictions imposed on private utilities by the Arizona Corporation Commission, resistance to and/or limitations on water transfers, obstacles to accessing infrastructure to move renewable supplies, and the AWS Rules, which emphasize the acquisition of permanent renewable water supplies well in advance of actual water use. These obstacles point to an overarching financial challenge for water providers, particularly those with smaller customer bases, to be able to finance and absorb the costs for such acquisitions.

Many groundwater-dependent municipal water providers are limited by their financial capabilities and in their access to the infrastructure necessary to deliver renewable supplies to their service areas because of where they are located.

The quantity of renewable supplies realistically available in the future is a concern for both municipal water providers and the CAGR (see *CAGR Issue Brief*). With fewer renewable supplies available for acquisition, municipal water providers will compete not only with each other, but also with the CAGR for the same supplies. Different perspectives exist regarding the role of competition in acquiring supplies, particularly in regard to whether the CAGR as an entity has reduced competition and may continue to reduce competition in the future. These perspectives need to be considered as the State continues to look at barriers and opportunities to obtain renewable supplies and reduce reliance on groundwater.

There are 242 undesignated municipal water providers in the Phoenix, Pinal and Tucson AMAs. Since 1999, no undesignated municipal water providers have successfully been newly designated in the Phoenix AMA, which illustrates the difficulty of building a renewable water supply portfolio and reducing dependence on groundwater. The recent effort by the Town of Queen Creek to acquire renewable supplies to obtain a Designation and eliminate the replenishment obligation of the CAGR member lands it serves, demonstrates the difficult financial and logistical hurdles municipal water providers face. Understanding the Town's challenges and motivations, as well as those of the City of Buckeye, which has also pursued for years a Designation, could deepen the understanding of these issues and present opportunities for improvement moving forward.



**SIERRA
CLUB**

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February 2, 2021

Warren Tenney, Co-chair
Post-2025 AMA Committee

Dear Mr. Tenney:

Sierra Club is a national nonprofit organization of approximately 3.8 million members and supporters dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth's ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. Sierra Club's Grand Canyon Chapter was organized in 1965, and, prior to that, our members were also involved in protecting Arizona's resources. We have a significant interest in water management in Arizona. It is in this context that we comment on the Issue Briefs related to Groundwater and the Assured Water Supply Program and Central Arizona Groundwater Replenishment District (CAGRD) Replenishment and Water Supplies.

In both cases, we generally agree with the issue descriptions and the questions posed, but feel one question should be added: "What statutory changes are needed to address the issues described in this brief?"

In the case of the CAGRD, legislative change is required to authorize the CAGRD to deny membership if available renewable supplies are inadequate. To focus entirely on administrative fixes ignores the shortcomings of the law. The Post-2025 AMA Committee has been tasked with identifying needs and opportunities and should advocate for much-needed legislative change to address the issues it has identified that cannot be addressed any other way. First and foremost of these is the requirement that CAGRD enroll applicants who have met the necessary requirements, regardless of the availability of water for replenishment. As we stated in our previous letter, "the inability of the CAGRD to deny enrollment to any entity demonstrating a 100-year supply, regardless of CAGRD's capacity to identify additional supplies, should be a primary issue brought forward to the GWAICC, and the only fix for that is a statutory one. Legislative change could simultaneously be sought to address issues outlined in the Hydrologic Disconnect issue brief by requiring that water be replenished in the same location where it is pumped.

In the case of the Assured Water Supply Program, we question the value of exploring the last question related to roadblocks preventing access to renewable supplies and infrastructure. The uncertainty of future supplies is acknowledged, yet it is suggested the answer for groundwater-dependent areas is to join the fray trying to obtain surface water. If there are already questions

about having enough to go around, how can bringing in more entities to compete for surface water be the answer? The answer is that development should occur where there is water to support it.

Thank you for your consideration of these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Sandy Bahr". The signature is fluid and cursive, with the first name "Sandy" and last name "Bahr" clearly distinguishable.

Sandy Bahr
Chapter Director
Sierra Club – Grand Canyon (Arizona) Chapter

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³ A.A.C. R12-15-711. It should be noted that modification or revocation of a Designation does not affect continued construction (or groundwater use) within subdivisions whose plats have been previously approved pursuant to the Designation and for which one or more lots have been sold.

feet in the Pinal AMA) and would not negatively affect previously issued AWS Determinations and existing municipal uses.⁴

The requirement that projected groundwater use be consistent with the management goal may be met if withdrawals are made pursuant to the groundwater allowance or through the use of pledged extinguishment credits (which are added to the groundwater allowance balance).⁵ More detail on these types of groundwater withdrawals is provided in the *Unreplenished Groundwater Withdrawals Issue Brief*.

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Even with the benefits that followed the 1980 Groundwater Management Act, there are numerous pressures placed on groundwater in the AMAs, many of which have been identified in the *Unreplenished Groundwater Withdrawals*, *Hydrologic Disconnect*, and *Exempt Wells* Issue Briefs. The AWS Program has been a significant factor in encouraging municipal water providers to reduce groundwater use in the AMAs over the last 25 years. In the context of all the challenges identified by the Post-2025 AMAs Committee, the State should evaluate the AWS Program and consider how it can be improved well beyond 2025. Three main questions related to groundwater use under the AWS Program provide a starting point for evaluating whether the AWS Program could better provide consumer and economic protection and better aid in achieving the AMA management goals.

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As described above, under the current regulatory structure, new subdivisions that fall under the jurisdiction of the AWS Program may join the CAGRD for replenishment services and/or utilize groundwater that is consistent with the management goal through the use of Extinguishment Credits and/or the Groundwater Allowance.⁷ As groundwater uses expand to serve new development, there is a corresponding draw upon the aquifer that can reduce the volume of groundwater that exists in the aquifer.

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What are the risks to homeowners whose physical groundwater supplies may be depleted after the regulatory Assured Water Supply 100-year time frame?

As noted above, Certificates are typically not re-evaluated after they are issued by ADWR and revocation of a service area's Designation by ADWR does not impact previously platted subdivisions within that service area. This raises a question as to the potential ramifications for owners of land after 100 years. While the water demands of a given all previously issued Certificates or and Designations must be incorporated in future AWS applications, groundwater pumping reduces the amount of groundwater available for all existing municipal water providers serving Certificated lands or with Designations through time. These impacts may be more likely to occur where pumping and replenishment (or recharge and recovery) are hydrologically disconnected. Even with an AWS determination, other factors, including new and existing groundwater users not subject to the AWS requirements, may also affect the availability of groundwater supplies during the 100-year regulatory timeframe of an AWS determination.

What roadblocks prevent access to renewable supplies and infrastructure in these groundwater-dependent areas?

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Groundwater-dependent municipal water providers face obstacles in their ability to acquire renewable water supplies, to become designated, to extend their existing designations, or to reduce or eliminate their reliance on the CAGRD. These obstacles include the lack of institutional structures to facilitate the acquisition of renewable supplies, constraints on the marketability of surface water rights, costs of such supplies, certain restrictions imposed on private utilities by the Arizona Corporation Commission, resistance to and/or limitations on water transfers, obstacles to accessing infrastructure to move renewable supplies, and the AWS Rules, which emphasize the acquisition of permanent renewable water supplies well in advance of actual water use. These obstacles point to an overarching financial challenge for water providers, particularly those with smaller customer bases, to be able to finance and absorb the costs for such acquisitions.

Many groundwater-dependent municipal water providers are limited by their financial capabilities and in their access to the infrastructure necessary to deliver renewable supplies to their service areas because of where they are located.

The quantity of renewable supplies realistically available in the future is a concern for both municipal water providers and the CAGRD (*see CAGRD Issue Brief*). With fewer renewable supplies available for acquisition, municipal water providers will compete not only with each other, but also with the CAGRD for the same supplies. Different perspectives exist regarding the role of competition in acquiring supplies, particularly in regard to whether the CAGRD as an entity has reduced competition and may continue to reduce competition in the future. These perspectives need to be considered as the State continues to look at barriers and opportunities to obtain renewable supplies and reduce reliance on groundwater.

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DRAFT ISSUE BRIEF

GROUNDWATER IN THE ASSURED WATER SUPPLY PROGRAM

ISSUE STATEMENT

Large areas of the Active Management Areas (AMAs) remain groundwater-dependent due to a lack of renewable water supplies and infrastructure, which creates uncertainties as groundwater supplies become more limited.

- What are the role and consequences of the use of groundwater to support new growth after 2025?
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BACKGROUND

The Assured Water Supply (AWS) Program was designed as a consumer protection law and has evolved into a significant tool for sustaining the state's economic health by preserving groundwater resources and promoting long-term water supply planning.¹ The AWS Rules were developed with stakeholder input over many years, ultimately adopted by the Arizona Department of Water Resources (ADWR) in 1995², and subsequently modified over time. The AWS Program provides consumer and economic protection by requiring a demonstration of a 100-year water supply to serve a new development before lots can be sold in the State's AMAs.

An AWS can be demonstrated through either a Designation of AWS (Designation) or Certificate of AWS (Certificate). To secure either a Certificate or Designation, a 100-year supply of water must be demonstrated to satisfy the needs of the proposed use, either for one subdivision in the case of a Certificate, or for all of the demands within the service area of a water provider who seeks a Designation. The Director of ADWR must review a Designation at least every 15 years to determine whether the Designation should be modified or revoked.³ The Director does not typically reevaluate a Certificate.

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Commented [KF2]: CAGR is not an entity. It is a responsibility of the CAWCD. Suggest rewriting to say "CAGR is a responsibility of the . . ."

Commented [KF3]: This sentence implies that the Plan is updated, when in fact a new plan is required every ten years. Suggest rewriting to say, "The CAGR must submit a plan of operation every ten years to ADWR for review and approval. The Director of ADWR must determine whether the plan is consistent with achieving the management goals of the AMAs in CAGR's service area."

Commented [KF4]: Of course withdrawals reduce the amount of groundwater.

Commented [KF5]: This should say "is required to." We have no way of knowing today if the required replenish will take place indefinitely.

Commented [KF6]: will likely occur

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Commented [KF7]: This is an awkward sentence, making it unclear. I don't think it adds anything and suggest deleting it.

Commented [KF8]: Another unclear sentence. Suggest instead, "ADWR may continue to issue Certificates and Designations as long as Physical Availability of groundwater can be demonstrated." You've already defined "Physical Availability" on page 1.

Commented [KF9]: Are these "projections" or are they "model calculations?"

Commented [KF10]: All the more reason to be cautious. This sentence is sort of dismissive. I don't think that's what Rita's article implied.

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Commented [KF11]: and legal



February 02, 2021

Warren Tenney
Tim Thomure
Co-chairs Post-2025 AMAs Committee
C/o Arizona Department of Water Resources
1110 W Washington St #310
Phoenix, AZ 85007

Dear Mr. Tenney and Thomure:

CAWCD appreciates the opportunity to comment on the Post-2025 AMA Committee draft AWS Issue Brief and CAGRDR Issue Brief. CAWCD acknowledges the difficult and complex water policy challenges identified and described in both briefs. We want to thank the co-chairs and their staff for the work in melding a diverse set of perspectives into a document that accurately describes the CAGRDR and the context in which it operates. By simultaneously releasing issue briefs on the Assured Water Supply and CAGRDR, it supports our perspective these issues are inexorably linked and any change to one must be weighed against the impact on the other.

As many in the Arizona water community know, these issues are not new and have been the subject of much discussion and debate for several decades. As reflected in the draft CAGRDR Issue Brief, numerous statutory and policy changes have been implemented over time to reduce the uncertainty of future replenishment supplies and cost to CAGRDR and its members. Some of these changes have included: 1) the creation of the Replenishment Reserve, 2) increased regulatory oversight by ADWR over CAGRDR's Plan of Operations and its requirements, 3) statutory authority for CAGRDR to bond, 4) the development of CAGRDR's Water Supply Program, 5) the creation of CAGRDR Annual Membership Dues, and numerous adjustments to CAGRDR's rates and policies by CAWCD's Board of Directors to provide for more equitable distribution of CAGRDR costs among its members. Since its inception, CAGRDR has continued to evolve to better serve its members, reliably meet its statutory obligations and support economic growth of Arizona.

With that said, CAWCD also acknowledges the importance of the Post-2025 AMA Committee's work to take a forward looking approach and consider how changing conditions to local and regional water supply availability, increasing competition for existing supplies, and rising costs could impact both CAGRDR and non CAGRDR entities after 2025. CAWCD believes the AWS and CAGRDR draft Issue

Briefs generally provide a balanced overview of the water policy issues at play given the numerous and often times conflicting perspectives on these issues. One specific observation CAWCD would like to make, is the inclusion of inferred solutions in the CAGRDR Issue Brief. While CAWCD does not necessarily disagree with the potential solutions mentioned, such as strengthening ADWR oversight or adding Plan of Operation requirements, unlike the other Issues Briefs developed by the Committee, this Issue Brief appears to move immediately to potential solutions. CAWCD would recommend that inferences to solutions be removed from the CAGRDR Issue Brief and that the Committee refrain from identifying potential solutions until after the Issue Briefs have been taken to the full GWAICC for their consideration.

CAWCD has appreciated working with the Co-Chairs and ADWR directly as they have developed the subject issue briefs. As this work moves to the GWAICC, CAP will continue to remain engaged and supportive of the Committee's effort to evaluate solutions for the issues identified.

Sincerely,

Laura Grignano

Laura Grignano
CAGRDR Manager
Central Arizona Project
(623)869-2113
lgrignano@cap-az.com

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As noted above, Certificates are typically not re-evaluated after they are issued by ADWR. This raises a question as to the potential ramifications for owners of land after 100 years. While the water demands of a given Certificate or Designation must be incorporated in future AWS applications, groundwater pumping reduces the amount of groundwater available for all existing municipal water providers serving Certificated lands or with Designations through time. These impacts may be more likely to occur where pumping and replenishment are hydrologically disconnected. Even with an AWS determination, other factors, including new and existing groundwater users not subject to the AWS requirements, may also affect the availability of groundwater supplies during the 100-year regulatory timeframe of an AWS determination.

What roadblocks prevent access to renewable supplies and infrastructure in these groundwater-dependent areas?

Groundwater-dependent municipal water providers face obstacles in their ability to acquire renewable water supplies, to become designated, to extend their existing designations, or to reduce or eliminate their reliance on the CAGR. These obstacles include the lack of institutional structures to facilitate the acquisition of renewable

⁸ See the *Hydrologic Disconnect Issue Brief* for more detail. This phenomenon can also occur in situations where municipal water providers utilize annual storage and recovery of surface water and effluent to serve Certificated lands or lands within Designated service areas.

⁹ 2019 Pinal Model and 100-year Assured Water Supply Projection Technical Memorandum, October 11, 2019, http://infoshare.azwater.gov/docushare/dsweb/Get/Document-11793/2019_Pinal_Model_and_100-Year_AWS_Projection-Technical_Memorandum.pdf; Pinal Model 2019 Update Presentation, November 1, 2019, Slide 53, https://new.azwater.gov/sites/default/files/20191101_Pinal_Model_2019_Presentation.pdf.

¹⁰ Lower Hassayampa Sub-Basin Hydrologic Study and Computer Model. Town of Buckeye, Figure 9-16 November 15, 2006; ADWR Modeling Report No. 22, https://new.azwater.gov/sites/default/files/Modeling_Report_22_2.pdf; "Ground-Water Depletion Across the Nation." USGS, 2003. [https://pubs.usgs.gov/fs/fs-103-03/JBartolinoFS\(2.13.04\).pdf](https://pubs.usgs.gov/fs/fs-103-03/JBartolinoFS(2.13.04).pdf).

¹¹ Phoenix 3MP – Section 8.9; Previous scholarship has demonstrated that the 1,000 foot depth limit was not based upon hydrological or technical considerations (see, Rita Pearson Maguire, *Patching the Holes in the Bucket: Safe Yield and the Future of Water Management in Arizona*, 49 Ariz. L. Rev. 361 (2007)).

Commented [A1]: With the exception of the Scottsdale Water Availability Status (WAS) contract, CAGR's statutory replenishment responsibilities were never intended to ensure physical availability to its members, but rather ensure members pumping was consistent with the AMA management goals. Since ADWR has started to include CAGR replenishment in its modeling, this distinction maybe less clear.

supplies, constraints on the marketability of surface water rights, costs of such supplies, certain restrictions imposed on private utilities by the Arizona Corporation Commission, resistance to and/or limitations on water transfers, obstacles to accessing infrastructure to move renewable supplies, and the AWS Rules, which emphasize the acquisition of permanent renewable water supplies well in advance of actual water use. These obstacles point to an overarching financial challenge for water providers, particularly those with smaller customer bases, to be able to finance and absorb the costs for such acquisitions.

Many groundwater-dependent municipal water providers are limited by their financial capabilities and in their access to the infrastructure necessary to deliver renewable supplies to their service areas because of where they are located.

The quantity of renewable supplies realistically available in the future is a concern for both municipal water providers and the CAGRDR (see *CAGRDR Issue Brief*). With fewer renewable supplies available for acquisition, municipal water providers will compete not only with each other, but also with the CAGRDR for the same supplies. Different perspectives exist regarding the role of competition in acquiring supplies, particularly in regard to whether the CAGRDR as an entity has reduced competition and may continue to reduce competition in the future. These perspectives need to be considered as the State continues to look at barriers and opportunities to obtain renewable supplies and reduce reliance on groundwater.

There are 242 undesignated municipal water providers in the Phoenix, Pinal and Tucson AMAs. Since 1999, no undesignated municipal water providers have successfully been newly designated in the Phoenix AMA, which illustrates the difficulty of building a renewable water supply portfolio and reducing dependence on groundwater. The recent effort by the Town of Queen Creek to acquire renewable supplies to obtain a Designation and eliminate the replenishment obligation of the CAGRDR member lands it serves, demonstrates the difficult financial and logistical hurdles municipal water providers face. Understanding the Town's challenges and motivations, as well as those of the City of Buckeye, which has also pursued for years a Designation, could deepen the understanding of these issues and present opportunities for improvement moving forward.

From: "Robert S. Lynch" <RSLynch@rslynchaty.com>

Date: Tuesday, February 2, 2021 at 5:06 PM

To: Warren Tenney <wtenney@amwua.org>

Cc: "Tim Thomure, P.E." <timothy.thomure@tucsonaz.gov>, Theresa Johnson <tjohnson@azwater.gov>, Carol Ward <cward@azwater.gov>, Robert Lynch <rslynch@rslynchaty.com>

Subject: Comments on the two issue briefs requested by February 2, 2021

Mr. Tenney:

I am writing you in response to your request for comments. These comments are mine alone and do not represent the positions of any client of the firm.

The problems outlined in the issue brief on Groundwater and the Assured Water Supply Program touch on several important issues but also fail to discuss important contemporary issues that affect water use in Arizona.

1. The current problems go all the way back to our initial water code in 1919. While our sister states of Nevada and New Mexico were applying the Appropriation Doctrine to groundwater, we decided to use the "common bowl theory", that is, everybody can put a straw in the bowl and the person with the deepest straw wins. That decision relatively quickly brought up issues about whether a well was adversely influencing a surface water and what the rules should be about wells that are in or near watercourses. In 1935, the Supreme Court addressed this issue: where the well was drilled outside the ordinary high water line of a watercourse, it would be presumed to be groundwater; where a well was drilled inside the ordinary high water line, it would be presumed to be surface water.

These presumptions served us well until the late 1990's when these presumptions ran headlong into the hydrology of the Safford Valley, which could not be accommodated by such a simple set of principles. Thus was born the red line concept when the Arizona Department of Water Resources (ADWR) convinced the Arizona Supreme Court that it did not have the resources at the time to go out and test all of these wells but could map the saturated holocene alluvium and thus create a more sophisticated application of the 1935 decision. From then on, if you had a groundwater well or what you thought was a groundwater well and it ended up inside the red line boundaries described by ADWR, you had a problem if you didn't also have a surface water right. That problem is being compounded by arguments over cone of depression and even implications of the Endangered Species Act as weapons to stop groundwater pumping nowhere near a watercourse but pumping subsurface water that ultimately might flow to the watercourse. Whatever one might say about somebody who drilled a well near or somewhat near a watercourse after the late 1990's, a very large population of people followed the law as announced in 1935 and now are at risk. As the law develops in the adjudication process, the

tension between groundwater and surface water increases and the problem of trying to find renewable water supplies outlined in your paper is compounded.

Along the way, the courts have clarified (or expanded) the Winters Doctrine, the implied reservation of rights doctrine, which we were taught in law school only applied to surface water, to affect groundwater and even water quality issues. Since the Winters Doctrine carries with it priority dates, when juxtaposed with our “common bowl theory” groundwater law, things don’t fit. There are constitutional limitations on what you can do about this situation, but the plain fact of the matter is that not just future groundwater uses for growth are being questioned but existing uses as well. In short, as good an effort as the paper makes to outline the panoply of problems facing us with regard to future water supplies, it has not dealt with the elephant in the room. Since the issues concerning the elephant are largely judicially created, it is judicial action that likely will be the avenue to further clarify (or expand) the problem. The paper is obviously well done. It needs expanding.

2. The second paper concerning the Central Arizona Groundwater Replenishment District (CAGRD) starts from a familiar and erroneous posture. While the paper acknowledges that the authority for groundwater replenishment, usually referred to as the CAGRD, was an authority granted the Central Arizona Water Conservation District (CAWCD), the paper then continually talks about CAGRD as if it were a thing, not a bank account. In my view, the public would be better served if the paper was rewritten to clarify that the CAGRD is not a separate legal entity.

Apart from that, the problems outlined in the paper have their antecedents in the 1980 Groundwater Act long before the creation of this program in 1993. One overriding assumption in negotiating that bill, to which I was a party, was that new development would occur on existing farmland. In short, everyone believed that developers would buy farmland, but the law didn’t require it. Additionally, cities and towns were given a pass on the 100-year water supply criterion within their service areas which they could easily expand to include adjacent desert. Desert was cheaper than farmland and a number of desert subdivisions sprang up as annexation wars among municipalities continued. In the early 1990’s, the Legislature and everyone else realized that this assumption of 100-year water supply was fraught with danger and lumped municipalities into the pot with everyone else about having to prove a 100-year water supply, not just have it assumed.

Thus was born the augmentation program which was given to CAWCD. It early on acquired its label, CAGRD, even though it was a bank account. The augmentation program was intended to acquire renewable water supplies that would “back the play” of developers who had moved onto desert land instead of buying farms. The inherent problem was, of course, that there wasn’t any unallocated surface water available in Arizona and none of our sister states were in a position to donate water supplies to us, even if they wanted to, which they didn’t. Thus, we initiated a zero sum game. In order to have renewable water supplies added to existing supplies for the three Active Management Areas (AMAs), someone else’s renewable water supply, i.e., surface water rights or contracts, had to be transferred. While some early gambits

were successful, we now have what amounts to an ongoing war between people along the Colorado River with various priorities for Colorado River water and central Arizona. The dust-up noted in the paper about the Town of Queen Creek is just the point of the spear. Additionally, the CRITS, if the federal legislation they are requesting, on the assumption that they need it, is passed, will bring Priority 1 water to what is obviously a constrained market. When it is sliced up and partially transferred to central Arizona or elsewhere, the list of willing sellers to central Arizona may be excruciatingly limited.

I don't pretend to have answers to these questions, either the ones in the papers or the ones I have added to that array. As an attorney, I am taught to see the problems and the questions. Very seldom are we in the answer business.

This committee is doing a fine job in trying to identify issues. It is, frankly, a nasty business but the issues I've mentioned can't be ignored and need to be part of the conversation.

I wish you luck. This may not be a task for Hercules but, in my view, it is not far off that mark.

Bob Lynch

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HBACA/SAHBA Edits

Governor's Water Augmentation, Innovation and Conservation Council
Post-2025 AMAs Committee

DRAFT ISSUE BRIEF

GROUNDWATER IN THE ASSURED WATER SUPPLY PROGRAM

[The Committee's charge is to look at issues in "the Active Management Areas", not just Tucson, Pinal and Phoenix. The Santa Cruz and Prescott AMAs are both Safe Yield AMAs and are subject to the AWS. This paper should be re-written to include groundwater/AWS issues in these AMAs as well. In fact, the most logical organization for the paper would be to discuss each AMA separately and in the conclusions discuss issues, if any, that are common to all five AMAs.]

ISSUE STATEMENT

Large areas of the Active Management Areas (AMAs) remain groundwater-dependent due to a lack of renewable water supplies and infrastructure, which creates uncertainties as groundwater supplies become more limited.

- What are the role and consequences of the use of groundwater to support new growth after 2025?
- What are the risks to homeowners whose physical groundwater supplies may be depleted after the regulatory Assured Water Supply 100-year timeframe?
- What roadblocks prevent access to renewable supplies and infrastructure in these groundwater-dependent areas?

BACKGROUND

The Assured Water Supply (AWS) Program was designed as a consumer protection law and has evolved into a significant tool for sustaining the state's economic health by preserving groundwater resources and promoting long-term water supply planning.¹ The AWS Rules were developed with stakeholder input over many years, ultimately adopted by the Arizona Department of Water Resources (ADWR) in 1995², and subsequently modified over time. The AWS Program provides consumer and economic protection by requiring a demonstration of a 100-year water supply to serve a new development before lots can be sold in the State's AMAs.

An AWS can be demonstrated through either a Designation of AWS (Designation) or Certificate of AWS (Certificate). To secure either a Certificate or Designation, a 100-year supply of water must be demonstrated to satisfy the needs of the proposed use, either for one subdivision in the case of a Certificate, or for all of the existing and projected demands within a specified time frame (the effective period of the designation) and within the service area of a water provider who seeks a Designation. The Director of ADWR must review a Designation at least every 15 years to determine whether the Designation should be modified or revoked.³ The Director does not

¹ <https://new.azwater.gov/aaws>

² The 1995 rules did not include provisions specific to consistency with the management goal of the Santa Cruz Active Management Area (SCAMA), which was created by the Legislature in 1994 (A.R.S. § 45-411.04). AWS rules have not yet been modified to address consistency with the management goal of the SCAMA, and it is not addressed in this Issue Brief.

³ A.A.C. R12-15-711

typically reevaluate a Certificate. Similarly, ADWR does not review subdivisions approved during the pendency of a designation.

Both Certificates and Designations can be demonstrated based entirely or partially on groundwater. Two of the requirements for demonstrating an AWS are that the water for the proposed Certificate or Designation is Physically Available for 100 years and that the use of the water is consistent with the management goal of the AMA. Physical Availability of groundwater is the regulatory measure of an applicant's ability to demonstrate sufficient groundwater for 100 years. To satisfy the Physical Availability requirement for groundwater, an applicant must show that its groundwater withdrawals would not cause the depth to groundwater to exceed a regulatory limit (1,000 feet below the land surface in the Phoenix, Tucson, Prescott, and Santa Cruz AMAs; 1,100 feet in the Pinal AMA) and would not negatively affect previously issued AWS Determinations and existing municipal uses.⁴

The requirement that projected groundwater use be consistent with the management goal may be met if withdrawals are made pursuant to the groundwater allowance or through the use of pledged extinguishment credits (which are added to the groundwater allowance balance).⁵ More detail on these types of groundwater withdrawals is provided in the *Unreplenished Groundwater Withdrawals Issue Brief*.

In the Phoenix, Pinal and Tucson AMAs, the requirement that projected groundwater use be consistent with the management goal may also be satisfied if the subdivision or water provider becomes a member of the Central Arizona Groundwater Replenishment District (CAGR). The CAGR is an entity created by the Arizona Legislature and placed within the Central Arizona Water Conservation District (CAWCD), which operates the Central Arizona Project (CAP). Since CAWCD encompasses only Maricopa, Pinal and Pima Counties (the service area of the CAP Project), the CAGR does not serve the Prescott or Santa Cruz AMAs. The CAGR replenishes excess groundwater⁶ pumped by or delivered to its members, after that volume is annually calculated and reported to the CAGR. The CAGR Plan of Operation must conform with the management goals of each AMA in its service area and requires approval at least every ten years from the Director of ADWR. Within a specific timeframe specified in statute, the Director has the authority to reopen an approved plan if either water demands significantly exceed projections or water supplies are not available to meet those projections.⁷

ISSUE DESCRIPTION

Even with the benefits that followed the 1980 Groundwater Management Act, there are numerous pressures placed on groundwater in the AMAs, many of which have been identified in the *Unreplenished Groundwater Withdrawals*, *Hydrologic Disconnect*, and *Exempt Wells* Issue Briefs. The AWS Program has been a significant factor in encouraging municipal water providers to reduce groundwater use in the AMAs over the last 25 years. In the context of all the challenges identified by the Post-2025 AMAs Committee, the State should evaluate the AWS Program and consider how it can be improved well beyond 2025. Three main questions related to groundwater

⁴ A.A.C. R12-15-716 and ADWR Substantive Policy Statement: *Hydrologic Studies Demonstrating Physical Availability of Groundwater for Assured and Adequate Water Supply Applications* (AWS 7).

⁵ A.A.C. R12-15-722. The Groundwater Allowance is a volume of groundwater which may be calculated for each AWS determination according to rules specific to each AMA. See *Unreplenished Groundwater Withdrawals Issue Brief*.

⁶ "Excess groundwater" is any amount of pumped groundwater beyond what is permitted by the AWS rules. With a few exceptions, this generally means the volume of groundwater pumped that exceeds the groundwater allowance and/or extinguishment credits of a CAWS or DAWS. More detail on CAGR operations is provided in the *CAGR Issue Brief*.

⁷ A.R.S. §45-576.03.R

use under the AWS Program provide a starting point for evaluating whether the AWS Program could better provide consumer and economic protection and better aid in achieving the AMA management goals.

What are the role and consequences of the use of groundwater to support new growth after 2025?

As described above, under the current regulatory structure, new subdivisions that fall under the jurisdiction of the AWS Program may join the CAGRDR (only in three of the AMAs, not all five) for replenishment services and/or utilize groundwater that is consistent with the management goal through the use of Extinguishment Credits and/or the Groundwater Allowance.⁸ As groundwater uses expand to serve new development, there is a corresponding draw upon the aquifer that can reduce the volume of groundwater that exists in the aquifer. (At an “aquifer level”, this is true only of Extinguishment Credits and use of Groundwater accounts by designated water providers; use of excess groundwater is replenished, so the aquifer is not negatively impacted. In fact, the aquifer is benefited by the 5% cut to the aquifer.)

While the CAGRDR will replenish the portion of these groundwater withdrawals attributed to its member obligation, localized depletion of groundwater may occur in cases where replenishment occurs outside the area where groundwater is withdrawn or in cases where there are allowable unreplenished groundwater withdrawals.⁹ The CAGRDR has the flexibility to replenish in various locations of the three AMAs it serves in order to fulfill for its members consistency with the AMA-wide management goal, which could be at odds (How?) with the physical availability criteria for AWS demonstration. (In the Phoenix AMA, CAGRDR is statutorily required to replenish proportionally in the East Valley and the West Valley, depending on the location of groundwater pumping.)

New Certificates and Designations may be approved by ADWR as long as Physically Available groundwater can be sufficiently demonstrated. In the Pinal AMA, ADWR modeling shows insufficient groundwater is Physically Available for AWS determinations already issued by ADWR over the 100-year modeling period (unmet AWS demand) which, if left unresolved, would not allow additional AWS determinations using groundwater or stored water recovered outside the area of impact to be approved.¹⁰ The largest volume of groundwater allocated under existing assured water supply approvals are within Analyses of Assured Water Supply, which are generally a first step towards obtaining a certificate of assured water supply. ADWR has taken the position that because its latest modeling shows that not all of these approvals, plus certificates and designations issued in the AMA can be met, no new certificates of assured water supply will be issued.

In addition to curtailing the ability to subdivide lands for new development, diminished Physical Availability may lead to other adverse impacts. Assuming ADWR projections are accurate and no other steps are taken to reduce or ameliorate impacts of groundwater drawdown, depths to water in some localized areas of the AMAs would decline, resulting in increased land subsidence, decreased aquifer storage, and the potential deterioration of

⁸ See the *Unreplenished Groundwater Withdrawals Issue Brief* for more detail on groundwater use by AMA.

⁹ See the *Hydrologic Disconnect Issue Brief* for more detail. This phenomenon can also occur in situations where municipal water providers utilize annual storage and recovery of surface water and effluent to serve Certificated lands or lands within Designated service areas.

¹⁰ 2019 Pinal Model and 100-year Assured Water Supply Projection Technical Memorandum, October 11, 2019, http://infoshare.azwater.gov/docushare/dsweb/Get/Document-11793/2019_Pinal_Model_and_100-Year_AWS_Projection-Technical_Memorandum.pdf; Pinal Model 2019 Update Presentation, November 1, 2019, Slide 53, https://new.azwater.gov/sites/default/files/20191101_Pinal_Model_2019_Presentation.pdf.

water quality.¹¹ The degree to which these adverse impacts may occur when groundwater levels fall to depths of 1,000' below land surface is also unknown.¹² ADWR is in the process of updating its groundwater models for the Phoenix and Tucson AMAs which should provide better projections of the groundwater supplies in these two AMAs.

What are the risks to homeowners whose physical groundwater supplies may be depleted after the regulatory Assured Water Supply 100-year time frame?

As noted above, Certificates are typically not re-evaluated after they are issued by ADWR. This raises a question as to the potential ramifications for owners of land after 100 years. While the water demands of a given Certificate or Designation must be incorporated in future AWS applications, groundwater pumping reduces the amount of groundwater available for all existing municipal water providers serving Certificated lands or with Designations through time. These impacts may be more likely to occur where pumping and replenishment, or storage and recovery, are hydrologically disconnected. Even with an AWS determination, other factors, including new and existing groundwater users not subject to the AWS requirements, may also affect the availability of groundwater supplies during the 100-year regulatory timeframe of an AWS determination. (This may also be true under pumping associated with Designated water providers' Groundwater Exemptions.)

What roadblocks prevent access to renewable supplies and infrastructure in these groundwater-dependent areas?

Groundwater-dependent municipal water providers face obstacles in their ability to acquire renewable water supplies, to become designated, to extend their existing designations, or to reduce or eliminate their reliance on the CAGR. (How is this relevant to obstacles to acquiring renewable water supplies?) These obstacles include the lack of institutional structures to facilitate the acquisition of renewable supplies, constraints on the marketability of surface water rights, costs of such supplies, certain restrictions imposed on private utilities by the Arizona Corporation Commission, resistance to and/or limitations on water transfers, obstacles to accessing infrastructure to move renewable supplies, and the AWS Rules, which emphasize the acquisition of permanent renewable water supplies well in advance of actual water use. These obstacles point to an overarching financial challenge for water providers, particularly those with smaller customer bases, to be able to finance and absorb the costs for such acquisitions.

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Many groundwater-dependent municipal water providers are limited by their financial capabilities and in their access to the infrastructure necessary to deliver renewable supplies to their service areas because of where they are located.

The quantity of renewable supplies realistically available in the future is a concern for both municipal water providers and the CAGR (see *CAGR Issue Brief*). With fewer renewable supplies available for acquisition, municipal water providers will compete not only with each other, but also with the CAGR for the same supplies. Different perspectives exist regarding the role of competition in acquiring supplies, particularly in regard to whether the CAGR as an entity has reduced competition and may continue to reduce competition in the future.

¹¹ Lower Hassayampa Sub-Basin Hydrologic Study and Computer Model. Town of Buckeye, Figure 9-16 November 15, 2006; ADWR Modeling Report No. 22, https://new.azwater.gov/sites/default/files/Modeling_Report_22_2.pdf; "Ground-Water Depletion Across the Nation." USGS, 2003. [https://pubs.usgs.gov/fs/fs-103-03/JBartolinoFS\(2.13.04\).pdf](https://pubs.usgs.gov/fs/fs-103-03/JBartolinoFS(2.13.04).pdf).

¹² Phoenix 3MP – Section 8.9; Previous scholarship has demonstrated that the 1,000 foot depth limit was not based upon hydrological or technical considerations (see, Rita Pearson Maguire, *Patching the Holes in the Bucket: Safe Yield and the Future of Water Management in Arizona*, 49 Ariz. L. Rev. 361 (2007)).

These perspectives need to be considered as the State continues to look at barriers and opportunities to obtain renewable supplies and reduce reliance on groundwater.

There are 242 undesignated municipal water providers in the Phoenix, Pinal and Tucson AMAs. Since 1999, no undesignated municipal water providers have successfully been newly designated in the Phoenix AMA, which illustrates the difficulty of building a renewable water supply portfolio and reducing dependence on groundwater. The recent effort by the Town of Queen Creek to acquire renewable supplies to obtain a Designation and eliminate the replenishment obligation of the CAGRD member lands it serves, demonstrates the difficult financial and logistical hurdles municipal water providers face. However, this transfer process is not yet complete and may yet prove not to be problematic from either the buyer's or the seller's perspective. Understanding the Town's challenges and motivations, as well as those of the City of Buckeye, which has also pursued for years a Designation, could deepen the understanding of these issues and present opportunities for improvement moving forward.